

Attorney Docket No.: 99.25US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Cioca, et al.

Serial No.: 09/838,649

Group Art Unit: 1617

Filed: April 19, 2001

Examiner: Wells, Lauren Q.

For: Stable Antimicrobials in Structured Water

RESPONSE PURSUANT TO 37 CFR 1.111 - Remarks

The pending claims, Claims 1 to 5, 9 to 12, 20, and 22 are rejected under 35 U.S.C. §112, second paragraph because, according to the Examiner, Claim 1, 2, 4 and 5 are vague and indefinite. In particular, the Examiner questions, with respect to Claim 1, whether structured water inherently comprises a cluster structure. Applicants amend Claim 1 such that the structured water comprises at least one cluster structure comprising I and S water of certain conductivity and pH. Support for this amendment is found in the present specification at page 4, lines 20 to 25, and page 5, lines 1 to 4. If this amendment does not address the Examiner's concerns, Applicants request further clarification of the issue. Claims 2 to 5 are noted by the Examiner as lacking sufficient antecedent basis as they recite the limitation "The composition". Thus, Applicants amend these claims to clarify that the structured water is being further defined in Claims 2 to 5. Therefore, Applicants request that the §112 rejections be withdrawn.

The pending claims of the present invention are also rejected for being obvious in view of Cioca et al. (U.S. Patent No. 6,139,855) and Beerse et al. (U.S. Patent No. 6,217,887). According to the Examiner, the Cioca et al. teaches structured water in a composition that also contains a biologically active agent; but, does not teach at least two antimicrobial agents within the cluster of the structured water, and it does not teach silver ions. The teaching of salts of silver is found in the Beerse reference at column 7, lines 54 to 67. The compositions in the other reference cited by the Examiner, the Beerse reference, are antimicrobial in nature, and the silver salt is disclosed as an antimicrobial active agent. Therefore, the Examiner reasons, as previously mentioned, that the teaching of silver salt in the Beerse reference in combination with the Cioca reference, renders the present invention obvious. According to the Examiner silver must be within the cluster structure because the electropositive charges of silver would interact with the electronegative charges within and without of the cluster structure. This would result in, according to the Examiner, a cluster comprising silver ions within it. Further, since a compound and its properties are inseparable, the Examiner finds that adding structured water taught in Cioca et al. to a cosmetic composition must have the property of preserving the cosmetic. This, Applicants believe is not an accurate depiction of the teachings in Cioca et al. because at column 2, lines 36 to 66, it is taught not that structured water preserves the composition; but,

rather, that structured water enhances the activity of a biological active in the composition. Applicants assert that one of ordinary skill in the art would understand this to mean that a cosmetic composition containing silver ions taught in Beerse et al. would have enhanced antimicrobial activity if the water in the composition was the structured water taught in Cioca et al. This is not the subject of the present invention, and therefore, Applicants respectfully traverse the Examiner's rejection.

The present invention relates to structured water wherein the cluster structures of the structured water have at least two antimicrobial agents within the cluster structure. In other words, the two antimicrobial agents are incorporated within the cluster structure of the structured water. As a result, the silver ions do not precipitate out of the structured water of the present invention. This serves as evidence of the difference between the present invention and the mere addition of silver salts added to structured water or any other types of water. However, the simple addition of silver ions to structured water is well known in the art to result in a suspension. The electrical charge of silver ions is unstable and gradually dissipates causing instability of the suspension. As a result, of this instability, the color of the suspension changes from yellow, to brown, to red, to gray, and finally to black. During this color progression, the particle size of the silver increases. This is discussed in the present specification at page 1, line 19 to 31. Therefore, the silver ions simply added to water does not experience the type of electrostatic interaction that would result in clusters having silver ions within them.

The next question is whether the silver salt described in the Beerse reference behaves differently than the silver described in the present invention when *added to structured water*. However, regardless of this issue, there is nothing in either of the cited references, or in the knowledge of the skilled artisan, to equate the addition of antimicrobials to structured water in a solution, taught or suggested by the cited references, with the integration of antimicrobials within the cluster structures of structured water. The addition of silver to water, whether it be structured, tap or deionized water, is not the same as incorporation of silver ions within the clusters of structured water as set forth in the present specification at page 5, lines 20 to 22. The silver ion has a large mass and large ionic radius. Comparatively, the cluster structure stabilizing ions have a much smaller ionic radius in comparison with the silver ion. Because of the difference in the size of the ionic radii, the silver ion would not be expected by one of ordinary skill in the art to be readily incorporated within the cluster structures of structured water when silver ion is simply added to structured water. While the Examiner notes that interactive forces between the electropositive charge of the silver and the electronegative charge of the cluster structure would take place, Applicants assert that this is not the case when silver ions are added to structured water.

Structured water has clusters formed by the interaction of ions that are added to feed water. These ions in the feed water form the clusters of structured water after being passed through a structured water producing device. The simple addition of ions to feed water alone does not make structured water. This is

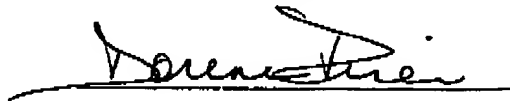
disclosed in the present specification at page 4, lines 26 to 27. Interaction of the dipolar molecular structure of feed water containing stabilizing ions with an electrical field simultaneously produces I and S water. Thus, the feed water has a certain conductivity and the structured water has a certain conductivity. If, as the Examiner suggests, silver ions could simply added to the structured water and interactions took place such that the silver ions were within the clusters of structured water, one of ordinary skill in the art would expect that the integrity of the clusters would be compromised and the structured water based on a set of clusters would be broken down. Thus it can be seen that one of ordinary skill in the art would not expect an interaction between silver ions and clusters of structured water by simple addition of silver ions to structured water because of the large size of the silver ions. Finally, the Beerse reference fails to disclose structured water, therefore, it alone fails to render the present invention obvious. Therefore, the combination of Cioca et al. and Beerse et al. does not teach or suggest the incorporation of the silver ions within the cluster of the structured water, and the present invention is not rendered obvious by the combination of these cited references.

The other combination of references is Cioca et al. and Stroud et al., however, the same situation arises when making this combination as does with the previous combination of cited references. Therefore, because the combination of Cioca et al. and Stroud et al. fails to remedy the defect of Cioca et al, the primary reference, Applicants assert that this combination of references also fails to render the present invention obvious. In Cioca et al., the only teaching or suggestion with respect to the combination of structured water and biological actives is as separate entities. There is no teaching or suggestion in the Cioca reference that the biological active in the form of a silver ion can itself be incorporated within the clusters of structured water by having the biological active present in the feed water and treating both the biological active and the feed water to integrate the active in the cluster structure of the structured water. Therefore, Cioca et al. in combination with any other reference that fails to remedy this defect will not render the present invention obvious and a *prima facie* case of obviousness has not been made.

As the claims of the present application are believed to be in condition for allowance, issuance of a Notice of Allowance is respectfully solicited.

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Respectfully submitted,



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